

AMENDMENT UNDER 37 C.F.R. § 1.116  
U.S. Application No.: 09/891,655  
Attorney Docket No.: Q51805

**AMENDMENTS TO THE CLAIMS**

**This listing of claims will replace all prior versions and listings of claims in the application:**

**LISTING OF CLAIMS:**

1. (currently amended): A metal oxide powder except  $\alpha$ -alumina, comprising polyhedral particles having at least 6 planes each, a number average particle size of ~~40  $\mu$ m or less~~ 0.1 to 40  $\mu$ m and a  $D_{90}/D_{10}$  ratio of 5 or less where  $D_{10}$  and  $D_{90}$  are particle sizes at 10% and 90% accumulation, respectively from the smallest particle size side in a cumulative particle size curve of the particles, and

wherein a ratio of agglomerated particle size to a primary particle size is from 1 to 6, and the metal oxide is a metal oxide of a metal element selected from the group consisting of the metal elements of the Group Ib, II, III, V, VI, VII and VIII of the Periodic Table.

2-3. (canceled).

4. (previously presented): The metal oxide powder according to claim 1, wherein said ratio of a primary particle size to an agglomerated particle size is from 1 to 3.

5. (canceled).

6. (currently amended): The metal oxide powder according to any one of claims 1 ~~or~~ and 4, wherein said metal oxide is a simple metal oxide titanium.

AMENDMENT UNDER 37 C.F.R. § 1.116

U.S. Application No.: 09/891,655

Attorney Docket No.: Q51805

7. (currently amended): The metal oxide powder according to any one of claims 1 or and 4, wherein said metal oxide is a simple metal oxide of a metal selected from the group consisting of magnesium, zirconium and iron.

8. (currently amended): The metal oxide powder according to any one of claims 1 or and 4, wherein said metal oxide is a simple metal oxide of cerium.

9. (currently amended): The metal oxide powder according to any one of claims 1 or and 4, wherein said metal oxide is a simple metal oxide of a metal selected from the group consisting of indium and tin.

10. (currently amended): The metal oxide powder according to any one of claims 1 or and 4, wherein said metal oxide is a simple metal oxide of a metal selected from the group consisting of zinc, cadmium, gallium, germanium, niobium, tantalum, antimony, bismuth, chromium, molybdenum, manganese, cobalt, nickel and uranium.

11. (previously presented): A rutile type titanium oxide powder comprising polyhedral particles each having at least 8 planes, a number average particle size of from 0.1 to 300  $\mu\text{m}$ , a  $D_{90}/D_{10}$  ratio of 5 or less where  $D_{10}$  and  $D_{90}$  are particle sizes at 10% and 90% accumulation, respectively from the smallest particle size side in a cumulative particle size curve of the particles, and a ratio of agglomerated particle size to primary particle size of the particles is from 1 to 6.

12. (original): The rutile type titanium oxide powder according to claim 11, wherein a ratio of an agglomerated particle size to a primary particle size is from 1 to 2, and a BET specific surface area is from 0.1 to 10  $\text{m}^2/\text{g}$ .

AMENDMENT UNDER 37 C.F.R. § 1.116

U.S. Application No.: 09/891,655

Attorney Docket No.: Q51805

13. (previously presented): A method for producing a calcined metal oxide powder having a narrow particle size distribution except  $\alpha$ -alumina, comprising calcining a metal oxide powder or a metal oxide precursor powder in the presence or absence of a seed crystal in an atmosphere containing at least one gas selected from the group consisting of (1) a hydrogen halide, (2) a component prepared from a molecular halogen and steam and (3) a molecular halogen.

14. (original): The method according to claim 13, wherein said calcination is carried out in the presence of a seed crystal.

15. (original): The method according to claim 13 or 14, wherein said gas contained in said atmosphere gas is a hydrogen halide.

16. (original): The method according to claim 15, wherein said hydrogen halide is hydrogen chloride or hydrogen bromide.

17. (original): The method according to claim 15, wherein said hydrogen halide is hydrogen fluoride.

18. (original): The method according to claim 15, wherein a concentration of said hydrogen halide is at least 1 vol. % of said atmospheric gas.

19. (original): The method according to claim 13 or 14, wherein said gas contained in said atmosphere gas is said component prepared from a molecular halogen and steam.

20. (original): The method according to claim 19, wherein said molecular halogen is chlorine or bromine.

AMENDMENT UNDER 37 C.F.R. § 1.116

U.S. Application No.: 09/891,655

Attorney Docket No.: Q51805

21. (original): The method according to claim 19, wherein said molecular halogen is fluorine.

22. (original): The method according to claim 19, wherein said component is prepared from at least 1 vol. % of said molecular halogen and at least 0.1 vol. % of steam, both based on said atmosphere gas.

23. (original): The method according to claim 13 or 14, wherein said gas contained in said atmosphere gas is a molecular halogen which is chlorine or bromine, and a concentration of said molecular halogen in said atmosphere gas is at least 1 vol. %.

24. (original): The method according to claim 13, wherein said metal oxide powder or metal oxide precursor powder has a bulk density of 40 % or less of a theoretical value.

25. (original): The method according to claim 14, wherein said seed crystal had a bulk density of 40 % or less of a theoretical value.

26. (original): The method according to claim 13 or 14, wherein said metal oxide having a narrow particle size distribution except  $\alpha$ -alumina is formed on a site where said metal oxide powder or metal oxide precursor powder to be calcined is present.

27. (original): The method according to claim 13 or 14, wherein said metal oxide powder or metal oxide precursor powder to be calcined is a metal oxide powder or metal oxide precursor powder of a metal element selected from the group consisting of the metal elements of the Groups Ib, II, III, IV, V, VI, VII and VIII of the Periodic Table.

AMENDMENT UNDER 37 C.F.R. § 1.116

U.S. Application No.: 09/891,655

Attorney Docket No.: Q51805

28 (previously presented): The method according to claim 13 or 14, wherein said metal oxide powder or metal oxide precursor powder is a metal oxide powder or metal oxide precursor powder of a metal selected from the group consisting of magnesium, titanium, and iron.

29-30. (canceled).

31. (original): The method according to claim 13 or 14, wherein said metal oxide powder or metal oxide precursor powder is a metal oxide powder or metal oxide precursor powder of a metal selected from the group consisting of zinc, cadmium, gallium, germanium, niobium; tantalum, antimony, bismuth, chromium, molybdenum, manganese, cobalt, nickel and uranium.

32. (previously presented): A method for producing a calcined metal oxide powder having a narrow particle size distribution except  $\alpha$ -alumina, comprising calcining a metal oxide powder or a metal oxide precursor powder in the presence or absence of a seed crystal in an atmosphere containing at least one gas selected from the group consisting of (1) a hydrogen halide, and (2) a component prepared from a molecular halogen and steam.